CALIFORNIA ENERGY COMMISSION

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Introduction

Each year, the Energy Commission is directed by legislation to calculate Net System Power, which represents the mix of fuel types comprising the generic (undifferentiated) pool of power available for sale in California. This information provides consumers a basis for comparing electricity products. For example, if Company A claims that its product is greener (better for the environment) than power produced by other companies, the consumer can compare Power Content Labels. The Power Content Label shows the proportions of fuel types comprising the mix of the product offered, as well as Net System Power.

2000 Net System Power

Staff s estimate of 2000 Net System Power is:

2000 CA POWER MIX	
Fuel Type	Net System Power
Coal	16%
Large Hydroelectric	19%
Natural Gas	35%
Nuclear	17%
Other	1%
Eligible Renewables	12%
Total:	**100%**

What is Net System Power? The Statutory Definition...

According to Senate Bill 1305 (Stats. 1997, Ch. 796, Section 398.2), Net System Power is the mix of electricity fuel source types established by California Energy Resources Conservation and Development Commission representing the sources of electricity consumed in California that are not disclosed as specific purchases by retail service providers.

What is Net System Power? The Practical Definition...

Net System Power is the percentage of annual generation produced for consumption in California during the previous calendar year from each of the statute s fuel type categories. Imports of out-of-state generation by fuel type are added in, but both self-generation and specific purchases by fuel type are subtracted out.

How Net System Power is calculated:

Net System Power is calculated using a three-step process:

- calculate gross system power by:
    - summing all in-state generation by fuel type
    - estimating imports of power from net flows, and
    - establishing the generation mix for out-of-state generation imports delivered at interface points and metered by the system operators;
- classify and subtract from the gross system power mix all Specific Purchases identified by retail suppliers; and,
- classify and subtract from the gross system power mix all self-generated power.

What Are Specific Purchases?

Specific Purchases refer to retail power sales for which the seller can trace the generation back to a specific generator, and thereby make a claim that the electricity is of a particular fuel type. Retailers who do not wish to claim specific purchases may claim all of their power as Net System Power.

Data Used to Calculate 2000 Net System Power

The 2000 Net System Power report marks the second year that the NSP calculation was made using data collected specifically for this purpose. Prior to 1999, NSP calculations were performed using Quarterly Fuel and Energy Report (QFER) data. Starting in 1999, staff collected generation and out-of-state power flow data from System Operators as provided for under statute (Stats. 1997, Ch. 796, Section 398.3). Overall, data filings on generation and out-of-state flows were both complete and on time.

In contrast, the timeliness of Specific Purchase data filed by retail suppliers varied. Some of the data was received on time (on or before March 1) while other data was anticipated but not received by staff. Mindful of the legislative requirement that the Commission adopt net system power calculation by April 15, staff chose March 23 as the late-filings cut-off date. Specific Purchase data received after this date were not used in the calculation of Net System Power.

QFER Data is Useful

Staff relied on QFER data for two categories of data that were not being collected under the SB1305 Power Source Disclosure Program. The two categories were:

1) Self-generation data (subtracted from total generation by fuel type). This data was provided on QFER form 11.

2) Data on Qualifying Facilities (QFs): QFER form 2A.

Data on Imported Power

Characterization of net imports of electricity to California presents a challenge. While the Energy Commission lacks authority to require out-of-state generators to report directly, System Operators that are located in state, and which own, have entitlements to-, or dispatch out-of-state generators, must provide generator-specific energy data on imported power. The remaining power imported from out-of-state entities is estimated from power flow data that is provided by System operators. These power flow data are adjusted to account for known generator-specific imports (Hoover, Palo Verde, San Juan, etc.).

Allocating Imports of Electricity by Fuel Type

For 2000, staff used the same method that was used for 1999 Net System Power to allocate imported power by fuel type. Staff used system operator data to estimate imports and applied the ***1994 Electricity Report*** non-firm energy fuel mix assumptions for the generation mix of out-of-state imports. These assumptions follow:

The Pacific Northwest	The Southwest
70 percent hydroelectric	74 percent coal
30 percent coal	26 percent natural gas

This resource mix is based upon assumptions developed for a production cost model. As noted in ***1994 Electricity Report*** [1]***,*** the Pacific Northwest fuel mix ratio changes from 80% hydro : 20% coal (used in 1997-1999 NSP calculations), to 70% hydro : 30% coal (beginning in year 2000). Both the flow data used and fuel-type allocations are meant to serve as approximations of what happens in the interstate market. Staff feels that while this data is suited to NSP purposes, it should not be used to make absolute comparisons regarding trends in out-of-state generation of a particular fuel type over time.

Differences Between the 2000 and 1999 Net System Power Calculations

Last summer, California began experiencing a sustained period of electricity supply shortage. Although there were many contributing factors, a decreased supply of available out-of-state electricity generation caused the state s fossil-fired plants to run harder and generate more to make up the difference.

The other major factor had to do with how data was reported. In 1999, only one municipal utility claimed all of electricity sales as being Specific Purchases. For 2000, more than one municipal utility chose to claim all of its electricity sales as Specific Purchases. As a result, the year 2000 total Specific Purchases increased by a factor of almost 450% over total Specific Purchases claimed in 1999. Since Specific Purchases

[1] 1994 Electricity Report, Appendix A, Part II, Section E, Page A-II-E-5. Section titled Fuel Mix of Electricity imported into California.

are subtracted from Gross System Power, the resulting 2000 Net System Power is much less than it otherwise would have been.

2000 Net System Power

Net System Power Calculation for 2000				
Fuel Type	Million Kilowatt-hours		Net System Power	
Coal		37,229		15.7%
Large Hydroelectric		44,593		18.8%
Natural Gas		83,052		35.1%
Nuclear		40,713		17.2%
Other		3,067		1.3%
Eligible Renewables		28,101		11.9%
Biomass & Waste	5,540		2.3%	
Geothermal	10,968		4.6%	
Small Hydro (≤30 MW)	7,135		3.0%	
Solar	860		0.4%	
Wind	3,597		1.5%	
Total:		**236,754**		**100%**

1999 Net System Power

Net System Power Calculation for 1999				
Fuel Type	Million Kilowatt-hours		Net System Power	
Coal		51,460		19.8%
Large Hydroelectric		52,082		20.1%
Natural Gas		80,497		31.0%
Nuclear		42,030		16.2%
Other		1,671		0.6%
Eligible Renewables		31,625		12.2%
Biomass & Waste	5,119		2.0%	
Geothermal	12,786		4.9%	
Small Hydro (≤30 MW)	8,916		3.4%	
Solar	954		0.4%	
Wind	3,850		1.5%	
Total:		**259,365**		**100%**